

## REMARKS

Applicant notes with appreciation the entry of the supplemental IDS filed with Applicant's response of January 13, 2003.

The Examiner continued his/her objection to the two hyperlinks in the specification. Applicant has now amended both hyperlinks in accordance with the Examiner's suggested format. Reconsideration and withdrawal of the objection to the hyperlinks is respectfully requested.

The Examiner objected to the prior amendment of independent claims 14, 20, 21, and 22 in which the language "creating a comparison matrix based on the context vector" was substituted for "creating a distance matrix", on the grounds that such a limitation could not be found within the disclosure. The Examiner referred to the specification at pages 21-22 which states that "the context vectors are used to create a distance matrix" and the Examiner stated that he could find no other uses for context vectors within the specification for the creation of a "comparison matrix".

As a result of the alleged lack of support for the term "comparison matrix", the Examiner found the term to be indistinguishable from "a distance matrix" and thus the § 102 and § 103 objections over Eisen et al. alone, or in combination with Altschul et al., were maintained. Further, the Examiner alleged that according to the specification anything could be represented as a context vector (i.e., gene expression data) where the specification does not preclude expression data and does not provide limitations as to sequence data.

Applicant respectfully asserts that the presently amended claims are properly supported in the specification and overcome the prior art rejections.

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In Applicant's last response (of January 13, 2003), an embodiment set forth in the specification at pages 18-22 was illustrated as one implementation of the method of claim 14. See 1/13/03 Response at pages 7-9. A similar analysis was applied to the remaining independent claims 20-22 (see pages 9-10). In this illustration, Applicant described the claimed "comparing step" with respect to comparing step 610 described on pages 18-19 of the specification, wherein sequence data is compared to provide a respective comparison result. Applicant further illustrated the claimed "arranging step" with respect to arranging step 620 as described on page 20 of the specification and Fig. 7, with respect to arranging the comparison results in the square matrix indexed by the plurality of biopolymer materials. Applicant further illustrated the claimed "creating a high dimensional context vector" step with respect to the creating a context vector step 630 described in the specification at page 20, wherein the context vector for one of the biopolymer materials is based on a row or column of the square matrix. As further described in the specification at page 20, the resulting context vectors, which incorporate the comparison results, can be used for visualizing the set of sequence data (see step 230 in Fig. 2 and the description at pages 11, 7, and 20 of the specification).

The above illustration was believed to support the prior claim language of a "comparison matrix". However, the Examiner noted an example in which the specification refers to, as part of a visualization step, creating a distance matrix. In reply, and as clearly specified on page 21, last paragraph, of the specification, Applicant points out that this reference to a distance matrix is just one "example" of a possible "use" of the context vectors, but most importantly is part of a visualization step which would potentially occur only after the context vectors are created:

"Once context vectors are provided, the context vectors are projected onto a two- or three-dimensional viewing area (step 230 of Fig. 2). For example, the context vectors are used to create a distance matrix. Clustering may then determine a centroid for a subset of proteins, and then the clusters and objects, e.g., proteins, are projected onto the two- or three-dimensional viewing area. Previously discussed U.S. Patent Application Serial No. 09/408,716, entitled Data Processing, Analysis and Visualization System for Use with Disparate Data Types, describes one method of visualizing context vectors based on sequence data."

Specification at page 21, last paragraph, to page 22, first paragraph (emphasis added).

This illuminates the patentable distinction between the "distance matrix" of the prior art references, with Applicant's claimed process — namely Applicant claims a process which exists separate and apart from any creation of a distance matrix. For example, the prior art Eisen method starts with a series of gene expression data that does provide a measure (or indication) of the behavior of the objects (genes) — namely their expression data. Therefore, Eisen can proceed directly to clustering his set of gene expression data, and during clustering Eisen forms a distance matrix. This process described by Eisen is something which could potentially occur after performing Applicant's method, for example if Applicant wished to perform a cluster analysis on the context vectors which Applicant forms from the comparison results.

To further clarify this distinction, Applicant's amended independent claims now specify that the sequence data for the biopolymer materials, with which Applicant performs the initial comparing step, "lacks ascertainable attributes". As a result, Applicant claims an inventive process of comparing, arranging and creating a high-dimensional context vector. This distinguishes Applicant's claimed "sequence data" from the expression data of the cited prior art, which expression data does not lack ascertainable attributes for the reasons set forth in Applicant's specification and Applicant's prior response. Still further, Applicant has amended claim 14 to now recite

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that the created "context vector provides attributes to enable visualization of the sequence data of the respective biopolymer material." This replaces and avoids reference to a "comparison matrix" for which the Examiner did not see explicit support in the specification, and further eliminates any confusion with reference to the "distance matrix" in Applicant's specification and the prior art which is separate and distinguishable from the claimed context vectors.

Similar amendments have been made to independent claims 20-22.

These amendments are believed to overcome the Examiner's § 112 objection to the "comparison matrix" language as well as clarifying the distinction from the prior art "distance matrix". Neither cited reference teaches Applicant's claimed process. Thus, Applicant respectfully requests reconsideration and allowance of the claims.

Applicant has added new dependent claims 24-25 which further describe Applicant's context vector. Claim 23 recites that the context vector comprises part of an object attribute matrix of comparison results (see the specification at page 20, last line). New dependent claim 25 recites utilizing the context vector for comparison of the biopolymer materials using cluster analysis (see Applicant's specification at 1, last two lines).

Thus, these claims are believed to be fully supported and distinguishable from the prior art for the reasons previously indicated.

Applicant respectfully requests reconsideration and allowance of all claims. If the Examiner has any questions, it is respectfully requested that he telephone the undersigned attorney.

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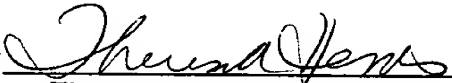
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Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: *Aug 5, 2003*

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